Docket No.: 65856-0025
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Scott A. Sirrine

Application No.: 09/736,232 Confirmation No.: 9140

Filed: December 14, 2000 Art Unit: 2128

For: DRIVELINE ANGLE ANALYZER Examiner: H. D. Day

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This pre-appeal is filed under the Pre-Appeal Brief Conference Pilot Program in response to the decision of the Examiner dated March 16, 2007 (Final Office Action), and also the Advisory Action of dated June 5, 2007. The Final Office Action finally rejected claims 1-7 and 9-21, including independent claims 1, 7, and 12. No other claims are pending. All pending claims are reproduced in a Claims Appendix attached hereto. This Pre-Appeal Brief is being submitted with a Pre-Appeal Brief Request for Review (Form PTO/SB/33). Further, a Notice of Appeal pursuant to 37 C.F.R. § 41.31 is being filed concurrently herewith.

In the Final Office Action (page 2), all pending claims were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Eaton Corporation (hereinafter "Eaton"), "Eaton Truck Components Bulletin, TRIB-9701", 1997, including the DAA program; in view of *Creger*, US 5,848,371 (Creger). This Pre-Appeal Brief focuses on the Examiner's clear error in an assumption that underlies the rejections of the pending claims, although Applicant intends to set forth additional

reasons supporting the patentability of the claims, including the separate patentability of dependent claims, in an Appeal Brief, if necessary.

Argument

Applicant's independent claims each recite a step of determining a vehicle driveline inertia. The Examiner has located a reference (Creger) where a driveline torque is determined. In the Final Office Action, the Examiner states "torque (driveline inertia) is determined," and (in articulating a purported motivation for the combination of references) "because torque (driveline inertia) is proportional to the already determined acceleration." (page 3, lines 11-12 and 20-21). Therefore, the clear error alleged by Applicant is the incorrect and unsupported Examiner's conclusion that torque and inertia are equivalent.

In the Final Office Action, the examiner contends (in commenting on the Applicant's arguments in the non-Final Office Action of September 25, 2006) that in view of "inertia, which is measured in foot pounds (ft-lbs)," and "[b]ased on the unit used for the disclosed driveline inertia, it is **obvious the disclosed driveline inertia in this instant application represents a torque**." (Final Office Action, page 14, lines 2-4, **emphasis added**). Accordingly, the Examiner has rejected the pending claims by incorrectly concluding that the alleged teaching of determining a torque in Creger is equivalent to determining an inertia, as recited in the pending claims.

Admittedly, both inertia and torque are commonly referred to in units of foot-pounds (as the Examiner has identified in the above quote from page 14 of the Final Office Action). However, inertia is commonly calculated in units of foot-pound mass (ft-lbm), whereas torque is generally measured in units of foot-pound force (ft-lbf). Importantly, Applicant cannot locate any reference that presents inertia in ft-lbf, or any reference that measures torque in ft-lbm.

The McGraw Hill Dictionary of Scientific and Technical Terms[1] defines inertia as: "that property of matter which manifests itself as a resistance to any change in the momentum of a body." Therefore, inertia requires only mass (lbm) and volume which are, significantly, a property of all

[1] Fourth Edition, copyright, 1989.

matter. An object in outer space would have inertia since weight (lbf) is of no import (the acceleration due to gravity acting on an object does not affect the inertia of the object).

The McGraw Hill Dictionary of Scientific and Technical Terms also defines torque as: "for a single force, the cross product of a vector from some point of reference to the point of application of the force with the force itself." Therefore, torque requires a force (lbf) acting on an object.

Accordingly, torque is an outside influence on an object while inertia is a property of all matter regardless of outside influences. An object, such as a specific vehicle driveline, may have zero torque, but the object always has inertia. As the torque acting on an object increases, inertia is unchanged. Significantly, Creger mentions a "torque due to accelerating inertia" (Creger, column 5, lines 56-57), which further undermines the Examiner's incorrect conclusion that torque and inertia are interchangeable.

Further, the Examiner states (with reference to Creger) that "the relationship between torque (driveline inertia) and ACCELERATION is I_{MN}." (Final Office Action, page 3, line 14). However, Creger tellingly identifies I_{MN} as inertia. (Creger, column 5, lines 60-65). Therefore, the teachings before the Examiner clearly demonstrate that torque and inertia are not equivalent, but are related in some calculation that includes acceleration. One of skill in the art would understand that the rotational acceleration of a vehicle driveline is a variable since the vehicle driveline rotational speed does not always change at a constant rate.

The Examiner uses the incorrect conclusion that torque and inertia are equivalent to support a motivation to combine the references for the rejection of all pending claims (Final Office Action, page 3, lines 18-22), and to purportedly identify all recitations of the claims in the references (Final Office Action, page 3, lines 11-12). Accordingly, the Examiner's support for a prima facie case of obviousness under 35 U.S.C. § 103 (See MPEP 2143) is entirely premised upon this incorrect conclusion.

For at least this reason, the 35 U.S.C. § 103 rejection of Applicant's pending claims is improper.

CONCLUSION

Independent claims 1, 7 and 12 are clearly allowable over the prior art of record for any of the foregoing independent reasons. The Pre-Appeal Panel is therefore respectfully urged to issue a decision stating that 'determining an inertia' is not equivalent to, nor obvious in light of, 'determining a torque'. The Pre-Appeal Panel is also respectfully urged to issue a decision stating that this application is allowed on the existing claims.

Applicant believes that no fee is due with this Pre-Appeal Brief. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. 65856-0025 from which the undersigned is authorized to draw. To the extent necessary, a petition for extension of time under 37 C.F.R. §1.136 is hereby made, the fee for which should also be charged to this Deposit Account.

Dated: July 16, 2007

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CLAIMS APPENDIX

1. (Previously Presented) A method of determining at least one of a torsional acceleration and an inertia of a vehicle driveline configuration comprising the steps of

entering measurements for the vehicle driveline configuration into a graphical user interface program; and

determining an inertia of the vehicle driveline based on the entered measurements.

2. (Previously Presented) The method of Claim 1, further including the step of selecting a representative vehicle driveline configuration from a plurality of driveline configurations prior to entering measurements of the vehicle driveline configuration into the graphical user interface program.

3. (Original) The method of Claim 1, wherein the graphical user interface program includes a corrective mode for enabling a user to interactively change the entered measurements of the vehicle driveline configuration to determine one of the torsional acceleration and the inertia of the vehicle driveline configuration.

4. (Original) The method of Claim 1, further including the step of printing a worksheet to aide a user in entering of the measurements for the vehicle driveline configuration.

5. (Previously Presented) The method of Claim 1, further including the step of printing results from the determination of the inertia for the vehicle driveline configuration.

6. (Previously Presented) The method of Claim 1, further including the step of saving results from the determination of the inertia for the vehicle driveline configuration as an image file.

7. (Previously Presented) A method of diagnosing and correcting driveline angles and lengths of components of a vehicle driveline, comprising the steps of:

selecting a representative vehicle driveline from a plurality of saved driveline configurations;

entering measurements of the vehicle driveline into a graphical user interface program;

determining an inertia of the vehicle driveline based on the entered measurements of the driveline angles and lengths of the components; and

enabling a user to interactively change the entered measurements of the vehicle driveline to determine one of the torsional acceleration and the inertia of the vehicle driveline.

8. (Canceled)

9. (Original) The method of Claim 7, further including the step of printing a worksheet to aide a user in entering of the measurements for the vehicle driveline.

10. (Previously Presented) The method of Claim 7, further including the step of printing results from the determination.

11. (Previously Presented) The method of Claim 7, further including the step of saving results from the determination as an image file.

12. (Previously Presented) A method of determining one of a torsional acceleration and a driveline inertia of a desired vehicle driveline configuration, comprising the steps of:

selecting a vehicle driveline configuration from a plurality of driveline configurations;

entering measurement data for the desired vehicle driveline configuration;

determining the driveline inertia of the desired vehicle driveline configuration based on the entered measurements; and

displaying a driveline inertia of the desired vehicle driveline configuration.

13. (Previously Presented) The method of Claim 12, further including the step of enabling a user to interactively change the entered measurements of the desired vehicle driveline configuration to determine the torsional acceleration of the vehicle driveline configuration.

14. (Previously Presented) The method of Claim 12, further including the step of printing a worksheet to aide a user in entering of the measurements for the desired vehicle driveline configuration.

15. (Previously Presented) The method of Claim 12, further including the step of printing results from the determination the driveline inertia for the desired vehicle driveline configuration.

16. (Previously Presented) The method of Claim 12, further including the step of saving results from the determination of the driveline inertia for the desired vehicle driveline configuration as an image file.

17. (Previously Presented) The method of Claim 1, further comprising selecting a representative vehicle driveline from a plurality of saved driveline configurations, wherein the step of selecting includes comparing a picture of a selectable driveline configuration to the vehicle driveline.

18. (Previously Presented) The method of Claim 7, wherein the step of selecting includes comparing a picture of a selectable driveline configuration to the vehicle driveline.

19. (Previously Presented) The method of Claim 12, wherein the driveline inertia is a drive inertia.

20. (Previously Presented) The method of Claim 12, wherein the driveline inertia is a coast inertia.

21. (Previously Presented) The method of Claim 12, further comprising selecting a representative vehicle driveline from a plurality of saved driveline configurations.